REMARKS

Claims 9-12 and 19-22 are currently pending. Claims 1-8, 13-18 and 23-24 are cancelled. Claims 9-10, 19 and 22 are currently amended.

35 U.S.C. §112 Rejections

In the Final Office Action, dated June 11, 2009 [*hereinafter* Final Office Action], the Examiner argued that claims 9-12 and 19-22 were indefinite under 35 U.S.C. §112, ¶2. Applicants respectfully direct the Examiner's attention to amended claim 9 and Fig. 2, as Applicants respectfully traverse this rejection.

Amended claim 9 calls for, among other things, a feedback path having a first node and a second node, the feedback path comprising a current sensing portion and an analog-to-digital converter, wherein the analog-to-digital converter is adapted to process voice signals. The Examiner rejected the previous claim language because the Examiner argued that an input and output to a feedback loop was unclear. Amended claim 9 recites a first node and a second node, not an input and output, thus the Examiner's argument that a feedback loop cannot have an input and an output is moot. In support of this amendment, the Examiner's attention is respectfully directed to Fig. 2 for an illustration of an exemplary embodiment in view of claim 9. Figure 2 shows a feedback loop beginning at CURRENT SENSING CIRCUIT 260 and running through components VIN 285, A/D 305, DC CANCELLATION 315, LIMITER 317, D/A 318, S/W 319, CANC 290, and back to CURRENT SENSING CIRCUIT 260. In an exemplary embodiment, components VIN 285 and CANC 290, in the feedback loop, may be the first and second nodes of claim 9 respectively. It should be appreciated that references to the Specification are provided for exemplary illustrative purposes only and are not to be construed as limitations of any pending claim.

The Examiner also objected to the "lesser current" limitation of claim 9. In the context of claim 9, a switch is provided for coupling the first and second nodes of the feedback path in response to receiving a control signal, wherein **lesser current flows through the A/D** converter in the feedback path **as a result of coupling** the first and second node. In other words, when the switch couples the first and second nodes, lesser current will subsequently flow through the A/D converter. In an exemplary embodiment, as may be illustrated in Fig. 2, by activating the S/W 319, the VIN 285 and CANC 290 components (i.e., in this exemplary embodiment, the first node and second node of claim 9) are coupled together, thus dividing, in some way, the current flowing through the A/D 305 into two portions: a portion flowing through the A/D 305 and a portion flowing down from VIN 285 to CANC 290 via S/W 319. As is well known in the art, in view of such an exemplary embodiment, the current flowing into VIN 285 from is equal to the sum of the current flowing into the A/D 305 and the current flowing from VIN 285 to CANC 290 via S/W 319. As such, the current flowing through A/D 305 is less after the S/W 319 couples the VIN 285 and CANC 290.

The Examiner states that it is allegedly "unclear how less current would ***only*** flow through one component on the loop." *See* Final Office Action, p.3 (*emphasis added*). Applicant respectfully submits that the Examiner's question in not relevant to claim 9. Claim 9 **does not** call for less current to "only" flow through the A/D converter, as the Examiner incorrectly contends. Rather, proper reading of the claim language reveals that less current flows explicitly through the A/D converter. Claim 9 does not explicitly call for less current to flow through other components in the feedback path; in practice, less current may or may not flow through other components. In other words, a behavior/property of the A/D converter is specified in claim 9, but this explicit claimed feature is not to be read as specifically requiring (or not requiring)

behaviors in other components *per se*. One of skill in the art would, however, note that in electrical circuits, components connected together directly in series will have the same amount of current flowing through them.

In view of the preceding explanation, Applicant asserts that the claimed feature of a feedback loop and the claimed features of a first node and a second node are both clear and definite. As such, Applicant respectfully requests the rejection under 35 U.S.C. §112 be withdrawn.

35 U.S.C. §102 Rejections

The Examiner maintains the rejection of claims 9-12 and 19-22 under 35 U.S.C. §102(b) as being anticipated by US 5,809,109 ***(Moyal)***. Applicant respectfully traverses this rejection.

As described in the patent application, signals in a line card can fluctuate to high levels during the ringing mode, thus causing damage to one or more electronic components of the line card. One or more embodiments of the present invention are directed at reducing the potential of damage to electronic components in the line card during the ringing mode. By way of example, Figure 2 of the present application depicts a line card 10 that includes a DC cancellation loop 298 for processing voice signals. This loop may include one or more electrical components, such as an analog-to-digital converter 305, for processing signals. As explained in the patent application, and as shown in Figure 2, during the ringing mode, in order to reduce the voltage and/or current levels in the line card 10, one or more embodiments of the present invention are directed at coupling the VIN terminal 285 to CANC terminal 290 of the loop using a switch 319. By coupling these terminals in an inventive manner, more of the current flows through these terminals during the ringing mode, while lesser current flows throw the DC cancellation loop

298, thereby protecting the electrical components (*e.g.,* A/D converter 305) in the loop from damage. Against this general backdrop, the claims are now specifically addressed.

For ease of illustration, claim 9 is discussed first. Claim 9 is directed to an apparatus that includes a feedback path having a first node and a second node, the feedback path comprising a current sensing portion. Claim 9 further specifies that the feedback path includes an analog-to-digital converter for processing voice signals. The apparatus of claim 9 further calls for a switch for coupling the first and second nodes of the feedback path in response to receiving a control signal, wherein lesser current flows through the analog-to-digital converter in the feedback path as a result of coupling the first node and second node. Claim 9 further calls for a ringing generator that provides a ringing signal in response to the control signal. As explained in the patent application, the two nodes are coupled so that lesser current flows to the A/D converter, thereby reducing the potential of any damage.

The Examiner asserts that ***Moyal*** teaches all the features of claim 9. Applicant respectfully disagrees. In the Final Office Action the Examiner indicated in the Response to Arguments section that it is the Examiner's position that the Vin terminal of switch 105 and the input terminal of the A/D converter 110 correspond to the claimed first and second nodes, as called for in the previous version of claim 9. *See* Final Office Action, p.7. Amended claim 9 calls for a first and second node, not a first and second input. To the extent the Examiner may take the same position with respect the first and second nodes, as now called for in claim 9, this position is untenable. For instance, claim 9 calls for a feedback path with a current sensing portion. Should the Examiner take the position that the Vin terminal of switch 105 and the input terminal of the A/D converter 110 in ***Moyal*** correspond to the claimed first and second nodes of claim 9, ***Moyal*** does not show a feedback path in which the Vin terminal of switch 105 and the

input terminal of the A/D converter 110 may be nodes. In addition to this fact, ***Moyal*** does not teach a feedback path (in which the Vin terminal of switch 105 and the input terminal of the A/D converter 110 are nodes) comprising a current sensing portion. As can be seen by the preceding discussion, when the elements of claim 9 are taken together in context, the application of ***Moyal*** is insufficient to teach all the claimed features.

Further, Figure 4 and col. 3, ll. 19-38 of ***Moyal***, as cited by the Examiner, describe a switch 105 that couples the output line 101 (i.e., the output line of PCD circuit 100) to the input of A/D converter 110 when the circuit is in the ringing mode. In the non-ringing mode, ***Moyal*** teaches that the switch couples the Vin signal to the input of A/D converter 110. This configuration is problematic for the Examiner's position because the Vin signal and the input of A/D 110 are not nodes of a feedback loop. When in ringing mode, there is **no loop** between the Vin signal and the input of A/D 110. In ringing mode, the switch opens the connection between the Vin signal and the input of A/D 110; in other words, an open connection means there is no contact between these two points. The description and figures in ***Moyal*** do not teach or describe any other loop, circuit or connection between the Vin signal and the input of A/D 110. Thus, if there is no contact or other circuit connecting the Vin signal and the input of A/D 110, there cannot be a feedback loop in ringing mode. It follows that if there is not a feedback loop in ringing mode, the switch 105 cannot couple the nodes of the feedback loop in response to receiving a control signal. In contrast, claim 9 calls for a first and second node of a feedback loop and for coupling the nodes in response to receiving a control signal. Further, claim 9 calls for an A/D converter in the feedback path. Under the Examiner's interpretation, the A/D converter is not within the feedback loop.

In addition, the Examiner makes the argument that the Vin signal provides "lesser current" than the ring generator (*see* Final Office Action, p.4, claim 9 arguments). Claim 9 calls for lesser current to flow through the A/D converter when the switch couples the first and second nodes of the feedback path. Under the Examiner's interpretation, for Vin to correspond to the "lesser current" limitation of claim 9, the switch 105 of ***Moyal*** must also couple the first and second nodes of the feedback path, as called for in claim 9. *See* ***Moyal***, Fig. 4. In other words, if the switch provides lesser current after coupling, the switch must connect the first and second nodes after coupling. According to ***Moyal***, Fig. 4, the position of the switch, as shown, corresponds to the "coupled" position of claim 9. It then follows that Vin **must** correspond to either the first node or the second node of claim 9 under the Examiner's interpretation. As such, any arguments made by the Examiner in which Vin is not a node must fail under the Examiner's "lesser current" interpretation (*e.g.*, the Examiner's argument that the tip 20 and ring 18 terminals in ***Moyal***, Fig. 4 are the first and second nodes is untenable under the Examiner's "lesser current" interpretation).

Further, as previously argued in the 35 U.S.C. §112 arguments, the Examiner's argument that Vin is the first node of claim 9 and the input to the A/D converter 110 is the second node of claim 9 is incorrect. As such, the Examiner has not shown how the ***Moyal*** reference has taught (or can teach) all the features of claim 9. That is, under the Examiner's "lesser current" interpretation, Vin must be a node of the feedback path, but Vin cannot, by it's definition in ***Moyal***, Fig. 4, be a node of a feedback path, as called for in claim 9. Under either position, the Examiner's arguments and reliance upon ***Moyal*** are shown to be misplaced.

In the Final Office Action, the Examiner argued in the Response to Arguments section that the Vin signal has a lower current than the analog ringing signal driving the subscriber loop.

See Final Office Action, p.8. The Examiner improperly attempts to cite an article from Wikipedia.org in support of this assertion. However, as the Examiner is not doubt aware, Wikipedia is not a proper source for substantiation. Wikipedia.org is available for editing by the public at large, thus the content on its website cannot be relied upon to be accurate. The Examiner does not cite any additional facts in the Response to Arguments section to substantiate this conclusory statement. The Examiner's position rests upon the assumption that the Vin line has the same impedance value as the PCD Circuit output line 101 (i.e., because Voltage = Current * Resistance or Current * Impedance). That is, the Vin line and the output line 101 would need to have equal impedance values for a direct correlation between rise in voltage and subsequent fall in current. In other words, even if it is assumed, for the sake of argument, that the voltage on Vin is lower than the voltage on PCD Circuit output line 101, there would not be less current flowing into the A/D converter 110 if the impedance of the Vin line was higher than that of the PCD Circuit output line 101 (according to the formula Voltage = Current * Resistance). There are no teachings in ***Moyal*** that specifying the impedance value of the Vin line or that the current into the A/D converter 110 is less when switch 105 is in the non-ringing position.

Claim 9 also calls for a control signal which activates a switch *and* prompts a ringing generator to provide a ringing signal. That is, the control signal recited in claim 9 is used for the switch and ringing generator. *See* Specification, Fig. 2 (319, 323, control signal from 350). In contrast, ***Moyal*** shows a "Ring Command" signal for activating switch 105, but ***Moyal*** is silent with respect to any control signals for prompting ring generator 202. The "Ring Command" signal is described as "supplied by higher level firmware or software, for example, from a private branch exchange, central office, or other similar entity." ***Moyal***, col. 3, ll. 13-16. As such, the

Ring Command signal cannot correspond to the control signal, as called for in claim 9, because the Ring Command signal in ***Moyal*** does not activate the switch 105 **and** the ring generator 202.

For at least these additional reasons, claim 9 is allowable. For at least reasons similar to those discussed above, claims depending from claim 9 are also allowable. Moreover, for at least similar reasons, all the remaining claims are also allowable.

Other pending claims are allowable in view of the features recited therein. For example, claim 19 and its dependent claims are allowable because ***Moyal*** fails to at least teach the claimed feature of coupling the first and second nodes of the first path in response to receiving the control signal such that lesser current flows through at least one of the components while the first and second nodes are coupled. Similarly, claim 22 is allowable because ***Moyal*** at least fails to teach a means for coupling the first node and the second node of the first path in response to receiving the control signal, wherein the coupling of the first node and the second node allows lesser current to flow through at least one of the components.

For at least these reasons, Applicant respectfully asserts the pending claims are not anticipated by ***Moyal***. Reconsideration is respectfully requested.

In light of the reasons presented above, a Notice of Allowance is respectfully solicited.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Houston, Texas telephone number (713) 934-4069 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

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